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AUTHOR Beins, Bernard C.
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ABSTRACT

The Barnum Effect was generated to teach students about the ethics of deception in research and the feelings of subjects who are deceived. The Barnum Effect occurs when individuals are duped into believing invalid results of psychological tests. People are most accepting when given favorable feedback about themselves. They interpret evaluations as being uniquely descriptive even when the feedback is so general that it applies to virtually everybody. Twenty-eight female and 11 male students in research methods classes received feedback based on a bogus personality inventory. Subjects then rated the perceived validity of the interpretations. Students accepted the feedback, although seniors were more skeptical than were juniors or sophomores. A discussion was conducted of the ethics of deception based on students' own reactions to the knowledge that they were deceived. Students agreed that the approach was effective in helping them learn firsthand about the costs and benefits of deception in research. Men and women reacted in the same ways. The demonstration seems useful for a wide range of students. Appendices contain the test items from the inventory and the evaluation questions. A seven-item list of references is included. (SLD)

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Bernard C. Beins

Ithaca College

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The Barnum Effect was generated to teach students about the ethics of deception in research and the feelings of subjects who are lied to. Students in research methods classes received feedback based on a bogus personality inventory. They rated the perceived validity of the interpretations. Students accepted the feedback, although seniors were more skeptical than juniors or sophomores. We generated a discussion of the ethics of deception based on their own reactions to the knowledge that they were deceived. Students agreed that the approach was effective in helping them learn firsthand about the costs and benefits of deception in research.

Using the Barnum Effect To Teach Ethics in Research

The Barnum Effect, in which individuals are gulled into believing invalid results of psychological tests, has been well documented in the literature of testing (e.g., Baillargeon & Danis, 1984; Holmes, Buchannan, Dungan, & Reed, 1986; Furnham & Schofield, 1987). Basically, people are most accepting when given favorable feedback about themselves. They interpret evaluations as being uniquely descriptive of themselves even when the feedback is so general that it applies to virtually everybody. This latter phenomenon has been labelled stereotype accuracy (Anastasi, 1982).

Furnham and Schofield (1987) have noted that this tendency to accept such spurious results does not necessarily result from the naivete of the victims of the Barnum Effect. They point out that "work on self-esteem and depression seems to suggest a stress on positive, rather than negative, self-image as characteristic of 'normal' people and itself adaptive" (p. 176). In some ways, then, it is not surprising that people will accept spurious results that confirm their self-images.

The Barnum Effect can be used pedagogically. Such an approach has been noted before (e.g., Beins, 1988; Palladino, 1991). As Palladino (1991) pointed out, through bogus personality inventories, students can learn in a very compelling way about the pitfall of blind acceptance of test results. A

second pedagogical use is to teach about the ethics of deception in a way that the students can relate it to their own research. In my research methods course, we spend considerable time discussing various aspects of the ethics of social research, using Reynolds (1982) as a prime source.

In the project described here, I generated the Barnum Effect in order to demonstrate the effects of deception in research by putting my students in the role of the deceived. Thus, the project will combine learning about content (i.e., psychological testing and the Barnum Effect) as well as process (i.e., ethics in research).

Method

Generating the Barnum Effect

Subjects. Thirty-nine students in a research methods class participated in the project as part of the course requirement. The group comprised 28 women and 11 men.

Materials and apparatus. Students completed a bogus personality inventory, the Quacksalber Personality Inventory for Normal Populations (Beins, 1988). They subsequently received interpretations that were identical for all students. All feedback statements were intended to be neutral or mildly positive. The test questions and subsequent interpretations appear in Appendix 1.

One class (n = 19) completed the test with a version designed for Apple II computers; feedback was provided immediately. The second class took a version printed on paper;

feedback was provided after about ten minutes.

Both groups then completed a form designed to assess the perceived validity of the test. The questions inquired whether the students thought that the feedback described them well or poorly. In addition, they rated the feedback with respect to the likelihood that the test itself would be useful for evaluating the stability and honesty of employees. The questions appear in Appendix 2.

Procedure. The students in the computer group each answered the 20 questions on the test. None of the responses were actually stored. After this phase of the study, the computer gave immediate feedback, showing three supposedly numerical scales with two qualitative statements associated with each.

In the paper group, the students filled out the questionnaire on computerized scoring sheets which were taken by a confederate of the teacher to be "scored." The confederate returned about ten minutes later with printouts for each student. As with the computer group, the feedback was identical for all students; it had been prepared in advance with each student's name written at the top of the evaluation sheet.

Finally, students evaluated the degree to which the feedback described them (1 = very applicable; 10 = not applicable at all). In addition, they noted whether they thought that the test would help employers spot employee instability and dishonesty. The responses in this phase of the project were all completed on computerized scoring sheets.

Following the data collection, students were debriefed as to the nature of the test, the results and the reasons for the deception involved (i.e., teaching about the Barnum Effect and teaching about what it feels like to be deceived by a researcher).

Assessing student reactions to the deception

Materials. Following the debriefing, students were asked about their reactions to being deceived. They answered an open-ended question about whether this test, which relies on deception, should be used in future classes.

Procedure. Students joined in a discussion about their feelings when I told them that they had been deceived. During the subsequent class, they answered the question about the suitability of this exercise to illustrate relevant points. We spent nearly an entire class discussing their responses. I tried to make it clear that I would consider their responses seriously before deciding whether to engage in this activity again with another class. I pointed out that deception was as much a problem in the classroom as it would be in the context of experimental research. I also stressed that, in their own research, if they used deception, their subjects would likely feel the same way that they (the students) did in this demonstration when they were informed of the deceit.

After we had discussed the rationale for this approach to teaching them, I assigned a research report on the Barnum Effect. It dealt with research on the topic, not with the ethics of

deception.

Results

Generating the Barnum Effect

Students were predictably accepting of the test results as descriptive of themselves. The mean rating was 3.6, on a scale of 1 to 10. This represented a significant departure from a neutral value of 5.5, $t(38) = -6.24$, $p < .001$. On the other hand, the students felt that the test would not be particularly effective in assessing personal adjustment, employee honesty and stability, or major or minor emotional problems. Thus, the students did not blindly accept the test as being a universally valid instrument.

The acceptance rating did not differ as a function of medium (computer vs. paper), $F(1,36) < 1$. Likewise, there was no effect of sex, the men and women being equally willing to accept the feedback, $F(1,36) = 1.75$, $p = .194$. The interaction also failed to reach significance, $F(1,36) < 1$.

The only significant difference according to group was that sophomores and juniors (who did not differ) were significantly less skeptical than seniors, $F(2,36) = 5.09$, $p = .0113$. The means were 3.00, 3.43 and 5.67, respectively.

Assessing student reactions to the deception

When I told the students that the test was fictitious, their reaction to the deceit was to feel "gullible" and "stupid." In general, they were mildly distressed at first. I also noted what seemed to be nervous laughter from several students during the

initial stages of the discussion.

Of the 31 students who commented anonymously about whether this demonstration was effective in teaching about both the Barnum Effect and deception, 30 students responded affirmatively. Their comments generally asserted that the costs of doing the demonstration (failure to acquire prior informed consent, invasion of their privacy in asking questions about their likes and dislikes, lying to them about the nature of the test) were outweighed by the benefits of learning that deception is not free of cost and of knowing firsthand how subjects would feel if they were told that they had been lied to. Other notable, and potentially serious, effects in this exercise are that the instructor's credibility might be called into question by students, psychological research might appear without validity or integrity, and students/subjects might develop negative feelings about psychological research. This eventuality did not emerge. The sole dissenter suggested that it was not worth making the students feel stupid and that the point about deception in research could be made simply by giving facts and examples. Additional evidence that the exercise was effective was that the students couched their approbation in appropriate terminology for discussing ethics. They learned not only the concepts, but how to express them correctly; they also learned the emotions of the deceived.

Discussion

This project seems to have been effective on both levels.

The students became acquainted with the Barnum Effect in the research report that they generated. They also seemed quite touched at the personal level by the experience. It was clear to me that they did not enjoy the trickery when it was inflicted on them. On the other hand, it seemed to provide a compelling message to them. The class discussion was tinged with a sense of sympathy with research subjects who are deceived.

The students also learned that, in some cases, deception can be tolerated. For example, in my classes, the students agreed that I should not regularly lie to them; on the other hand, the mild and short-lived discomfort about knowing that they had been lied to served to teach them an important lesson about deception in research. Thus, they asserted that the project was worth repeating with subsequent classes.

The project seems amenable either to computerized or paper application. The men and women reacted in the same way, both in generating the effect and in their responses to deception. This demonstration seems robust and pedagogically useful for a wide range of students.

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Appendix 1

Test items and interpretations used in the Psychological Inventory for Normal Populations by I. B. Quacksalber.

TEST QUESTIONS

Yes/No Questions
1. Are you talkative in groups?
2. Do your friends like you?
3. Do you enjoy spending time by yourself?
4. Can you express yourself better if you prepare your ideas in advance?
5. Do you like to be in front of groups?

Like/Dislike Questions
6. Looking at sculpture
7. Boxing
8. Seeing scientific displays
9. Weddings
10. Fixing things when they break

True/False Questions
11. People with money have more influence than ordinary people do.
12. My definition of a good job is one that pays well.
13. Manners are more important than being honest with someone.
14. I would rather look at artwork than at new kinds of machines.
15. Most people are capable of dishonesty if they are under enough stress.

Frequency of Behavior Questions (Always/Frequently/Not Very Often/Never)
16. Can you converse easily with old people?
17. Do you find it hard to resist a friend's request?
18. Are you usually tired when you go to bed?
19. Are you a follower when you get in a large group?
20. Do you worry about money?

TEST INTERPRETATIONS

A. You tend to avoid extremes and do things in moderation.
B. You have learned that you cannot trust even your closest friends all the time.
C. You agree with your friends most--but not all--of the time.
D. When your friends have problems, you are often willing to help them.
E. You believe in being fair with others, but you also think that people should help themselves.
F. You desire independence but will ask others for help when necessary.

Appendix 2

Evaluation Questionnaire

Please help us evaluate the adequacy of this test. In addition to professional analysis of the results, we need to get an estimate of the face validity of this test. In order to make judgments about the test, we would like you to answer the following questions. Please enter your judgments on the computerized scoring sheet provided.

Make sure that you put your name in the space provided, but do not fill in the circles for your name.

1.Indicate whether your are male (=1) or female (=2)

2. Are you a freshman (=1), sophomore (=2), junior (=3), senior (=4)

3. In what area are you majoring?
   a = liberal arts
   b = music
   c = engineering
   d = business
   e = health professions

4. On a scale of 1 to 10, indicate how well the Psychological Inventory for Normal Populations describes you. (1 = This is the real me; 10 = This is not like me)

5-9. A single well-made test can serve only one or two useful functions. Based on the results of your personality analysis, for what purposes do you think that this test will provide useful information? (1 = Very useful; 10 = Not at all useful)

5. Personal adjustment
6. Employment screening
7. Assessment of honesty
8. Identification of an individual's minor problems
9. Identification of an individual's major problems